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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/544,182	10/04/2006	Klaus Habik	HABI3001/JJC/PMB	8333

23364 7590 09/27/2010

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EXAMINER	
CORDRAY, DENNIS R	

ART UNIT	PAPER NUMBER
1791	

MAIL DATE	DELIVERY MODE
09/27/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/544,182	HABIK ET AL.	
	Examiner	Art Unit	
	DENNIS CORDRAY	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 July 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,10-15,17-33 and 35-47* is/are pending in the application.

4a) Of the above claim(s) *27-33 and 35-47* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,10-15,17-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's perfection of the foreign priority by submission of English translations of priority documents has overcome the rejections employing Leuninger et al as a reference. The indicated rejections have been withdrawn.

2. Applicant's arguments filed 7/19/2010 with respect to the rejections of claims over Kaule et al in view of Gertzmann et al have been fully considered but they are not persuasive.

Applicant notes that each of the possible compositions used for the second lacquer layer is different from the recited compositions used for the first lacquer layer. Applicant also notes that the reaction lacquer and reaction adhesive in Kaule et al cure irreversibly under specific physical (i.e.-radiation) or chemical activation. Applicant further notes that Kaule et al discloses that the lower and upper reaction layers are largely homogeneous chemically to provide a very firm compound in areas where the metal layer contains pores or microcracks. From these noted points, Applicant argues that the skilled artisan would utilize the same composition for each of the lower reaction layer and the upper reaction layer, which is in contrast to the claimed lacquer layers (p 16).

Kaule et al does not require the reaction adhesive layer (lower lacquer layer) and the UV-curable or chemically curable layer (upper lacquer layer) to be identical, but to be largely homogeneous chemically (col 4, lines 21-31). Largely homogeneous

chemically implies that the lacquers are chemically similar, but does not mean that they are identical or that they must be cured the same way. Kaule et al further discloses UV-curable or chemically-curable layers of reaction lacquer and adhesive that are irreversibly curable and that it is impossible to detach the layers later. In one embodiment. In one embodiment, Kaule et al discloses that mixed reaction adhesives (lower layer) can be used that are related chemically with the embossed layer (upper layer). The embossed layer need not be a UV-curing layer, but can be a chemically curing layer that has the same chemical base as the adhesive layer (col 6, lines 16-24). In another embodiment, the adhesive is a cationically curing adhesive that is only activated by UV light (not cured) and then curing further after irradiation (col 5, lines 18-26). Other embodiments include a delayed-curing lacquer, in which polymerization is initiated by irradiation with suitable light and then takes place with a time lag. The cationically-curing and delayed-curing are not cured by radiation, but only initiated, thus do not comprise a radiation curing component. One of ordinary skill in the art would have found it obvious to use a chemically curing adhesive layer and a chemically curing or UV-curing embossed layer that is largely homogeneous with the adhesive layer as an embodiment within the Specification of Kaule et al and have a reasonable expectation of success.

The outstanding rejections over the prior art not indicated as being withdrawn are maintained, but have been modified to address the amended claims. In addition, a new ground of rejection is presented due to the amendments.

Regarding the request for rejoinder of the withdrawn process claims, when the product claims are found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites the new limitation "without a radiation curing lacquer component" in describing the first lower lacquer layer. The Specification fails to recite such a negative limitation and the paragraphs cited in support of the limitation would not make it obvious to one of ordinary skill in the art that the first lower lacquer layer is without a radiation curing lacquer component.

From MPEP 2173.05(i): Any negative limitation or exclusionary proviso must have basis in the original disclosure. If alternative elements are positively recited in the specification, they may be explicitly excluded in the claims. See In re Johnson, 558 F.2d

1008, 1019, 194 USPQ 187, 196 (CCPA 1977) ("[the] specification, having described the whole, necessarily described the part remaining."). See also Ex parte Grasselli, 231 USPQ 393 (Bd. App. 1983), aff 'd mem., 738 F.2d 453 (Fed. Cir. 1984). The mere absence of a positive recitation is not basis for an exclusion.

Paragraph 7, which was cited in support, discusses the problems of known or conventional protective layers and states that water-based lacquers meet the requirements for bank note printing only if a crosslinking agent is added, but warns that crosslinking agents are very reactive, and that staff must be sensitized to risks and suitable protective measures must be taken. There is no reference to a radiation curing lacquer component or whether the crosslinking agent is such a component.

Paragraph 8, which was cited in support, merely states that the invention seeks to avoid the disadvantages of prior art and recites features of a security paper. There is no reference to a radiation curing lacquer component.

Paragraph 10, which was cited in support, recites a first lower lacquer layer being a physically drying lacquer layer that closes the pores of a substrate with which it is in contact. There is no reference to a radiation curing lacquer component or its absence in the first lower lacquer layer. As has been discussed in the rejections, some lacquer layers known in the art are physically dried and then further irradiated with UV light.

Paragraph 11, which was cited in support, states that the invention is based on the finding that advantageous properties of radiation-curing lacquers can also be used if depressions, uneven areas and pores of the substrates are previously closed by a physically drying lacquer layer. The paragraph further recites a disadvantage of

radiation curing lacquer layers in that residual monomers and free photoinitiators as a rule remain as very reactive components in depressions and pores of the substrate after curing, depending on the substrate quality, the radiated power, the initiator system and the monomer system. The paragraph teaches one of ordinary skill in the art that the substrate quality, the radiated power, the initiator system and the monomer system are result effective variables that may be optimized to control the amount of residual monomers and free photoinitiators remaining in depressions and pores of the substrate after curing, not that a radiation curing lacquer component is absent in the first lower lacquer layer.

Paragraph 13, which was cited in support, states that residual monomers and free photoinitiators of the radiation curing lacquer layer would be deposited into the cotton paper of bank notes without the inventive use of a lower lacquer layer. Presumably the radiation curing lacquer layer is the upper lacquer layer, although it was not previously mentioned in the Specification. There is no requirement that a radiation curing lacquer component is absent in the first lower lacquer layer.

Paragraph 15, which was cited in support, states that the upper lacquer layer is preferably a radiation-curing and/or physically drying lacquer layer. There is no requirement that a radiation curing lacquer component is absent in the first lower lacquer layer.

Paragraph 19, which was cited in support, describes further embodiments for the upper lacquer layer, but makes no requirement that a radiation curing lacquer component is absent in the first lower lacquer layer.

Paragraphs 39 and 40, which were cited in support, describe examples of two ply lacquer coatings and how they are applied, but makes no requirement that a radiation curing lacquer component is absent in the first lower lacquer layer.

Paragraph 48, which was cited in support, states that the lower lacquer layer contacts the paper fiber composite, closes its capillaries and forms a smooth cohesiva surface that insures optimal adhesion of the subsequently applied UV layer. There is no requirement that a radiation curing lacquer component is absent in the first lower lacquer layer.

In summary, one of ordinary skill in the art may learn that the substrate quality, the radiated power, the initiator system and the monomer system are result effective variables that may be optimized to control the amount of residual monomers and free photoinitiators remaining in depressions and pores of the substrate after curing, but would not learn that the first lower lacquer layer is without a radiation curing lacquer component.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 3, 4, 11, 13-15, 17, 21, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaule et al (US 5920971) in view of Gertzmann et al (US 6710120).

Claims 1, 3, 4, 11 and 26: Kaule et al discloses a security paper such as a bank note, identity card, etc., comprising a flat substrate (reference #1, Fig. 1) provided at least partly with a reaction adhesive layer or lower lacquer layer (4) contacting the substrate, a thin reflective metallized layer (3) and a UV-or chemically curable layer or upper lacquer layer of reaction lacquer (2). Adhesive layer (4) is largely chemically homogeneous with layer (2) (Abs; col 4, lines 17-38, Fig. 1). The adhesive can be a lacquer that cures by chemical action as opposed to UV radiation, thus a radiation curing component is not required or, at least a lacquer layer without a radiation curing component would have been obvious to one of ordinary skill in the art in such embodiments (col 3, lines 1-9 and 51-60; col 4, lines 35-38). The lower lacquer layer contacting the substrate is shown as a smooth, contiguous layer (Fig. 1) and, where present, will close the pores of the paper and prevent dirt from accumulating thereon or, at least, one of ordinary skill in the art would have found the closed pores and dirt repelling obvious. The upper lacquer layer is an irreversibly curable protective layer that resists physical and environmental (chemical) influences (col 4, lines 33-39; col 6, lines 1-3; col 6, line 58 to col 7, line 7, Fig. 8).

Kaule et al does not disclose the chemical composition or elastic properties of the lacquer layers.

Gertzmann et al discloses coating compositions for paper comprising, in some embodiments, hybrid aqueous dispersions of polyurethane, polymers comprising olefinically unsaturated monomers such as esters and/or amides of (meth)acrylic acid and alcohols having from 1-18 carbons, styrene, etc. and crosslinkers. Photoinitiators

can also be added to the coating, but are not required, thus the compositions in some embodiments do not comprise radiation curable components (Abs; col 1, lines 6-9; col 2, lines 40-42; col 10, lines 46-67; col 11, lines 1-5 and 14-17). The applied coating compositions form films that are dried (reads on physically drying) and may be (but are not required to be) further irradiated with UV light (col 11, lines 31-42). One of ordinary skill in the art would not use UV light where photoinitiators are not added.

The coatings or layers thus comprise one or more of aliphatic polyester polyurethanes, styrene-acrylic polyurethanes, radiation curing UV-crosslinked layer, aliphatic urethane acrylates and acrylates with photoinitiators.

The art of Kaule et al, Gertzmann et al and the instant invention is analogous as pertaining to UV-curable coatings for paper. One of ordinary skill in the art, lacking guidance from Kaule et al as to the chemical composition of the chemically curable and UV-curable layers, would have turned to disclosures of known chemically curable and UV-curable coatings for paper for further guidance. It would have been obvious to one of ordinary skill in the art to use a the claimed lacquers to provide a physically drying, chemically curing adhesive layer and a chemically curing or UV-curing embossed layer that is largely homogeneous with the adhesive layer as an embodiment of Kaule et al in view of Gertzmann et al and have a reasonable expectation of success in obtaining a bank note paper having two lacquer layers that are largely chemically homogeneous with each other and that resist physical and environmental (chemical) influences.

Using chemically similar coatings for the lower and upper layers would assure chemical homogeneity between the layers. The coatings are substantially the same as

the claimed coatings, and obtaining the claimed dirt-repellency, elasticity, chemical and physical protection would also have been obvious because, where the claimed and prior art apparatus or product are identical or substantially identical in structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent or at least obvious.

Claims 13 and 15: Kaule et al discloses that, in some locations, the upper lacquer layer is in direct contact with the lower lacquer layer to form a largely inseparable compound (forms a highly resistant bond) (col 3, lines 9-18).

Regarding Claim 14, Kaule et al discloses that the metallized layer can additionally be provided with a protective layer that is chemically homogeneous with layer 2 (col 5, lines 5-8). The additional protective layer lies between the lower and upper layers.

Claim 17: The two lacquer layers and thin reflective layer contain an embossed hologram (col 2, lines 32-37; col 4, lines 22-26). Holograms have optical properties that vary with the viewing angle. At least the top lacquer layer is transparent and colorless in order for the hologram to be viewed or, at least, making the top layer transparent and colorless would have been obvious to one of ordinary skill in the art.

Claim 21: The substrate can be bank note paper that has been printed on and the lower lacquer layer is applied directly to the substrate (col 5, lines 13-16).

Claim 24: In some embodiments, the lacquer layers are applied all over the substrate (col 7, lines 13-16).

5. Claim 2 is rejected under 35 U.S.C. 103(a) as unpatentable over Kaule et al in view of Gertzmann et al and further in view of Howland et al (US 5928471).

The disclosures of Kaule et al and Gertzmann et al are used as above. Kaule et al and Gertzmann et al do not disclose cotton paper.

Howland et al teaches that cotton is the preferred fiber for bank notes (col 5, lines 34-43).

The art of Kaule et al, Gertzmann et al, Howland et al and the instant invention is analogous as pertaining to security paper used for bank notes. It would have been obvious to one of ordinary skill in the art to use cotton paper as the substrate of the paper of Kaule et al in view of Gertzmann et al and further in view of Howland et al as the preferred paper for bank notes.

6. Claims 12, 19 and 20 are rejected under 35 U.S.C. 103(a) as unpatentable over Kaule et al in view of Gertzmann et al and further in view of Gerlier et al (US 6715750).

The disclosures of Kaule et al and Gertzmann et al are used as above. Kaule et al and Gertzmann et al do not disclose adjusting the upper lacquer layer to obtain predetermined smoothness, sound and/or flexural stiffness.

Gerlier et al teaches that a problem in cut sheet dispensers such as automated teller machines is the accidental dispensing of multiple sheets. One mechanism by

which the dispensers operate is by establishing a differential friction between an actuating mechanism and the first and subsequent sheets. A second mechanism involves buckling the top sheet to remove it from the stack (col 1, lines 8-28). Thus, the frictional resistance between bank notes, which is in part due to the smoothness of the sheets, and the flexural stiffness of the bank notes are important features to control.

The art of Kaule et al, Gertzmann et al, Gerlier et al and the instant invention is analogous as pertaining to paper used for bank notes. It would have been obvious to one of ordinary skill in the art to control the composition of the lacquer coatings and their thickness to the claimed range to obtain a predetermined smoothness and flexibility in banknotes made from the paper of Kaule et al in view of Gertzmann et al and further in view of Gerlier et al to ensure accurate dispensing in automated machines.

7. Claim 18 is rejected under 35 U.S.C. 103(a) as unpatentable over Kaule et al in view of Gertzmann et al and further in view of Tullo et al (US 6905711).

The disclosures of Kaule et al and Gertzmann et al are used as above. Kaule et al and Gertzmann et al do not disclose that the upper layer has an antibacterial fungus proofing.

Tullo et al discloses coating antimicrobial solutions on paper, such as mail, financial instruments and currency, which might be used by a terrorist to spread disease (Abs; col 1, lines 10-15; col 7, lines 60-67).

The art of Kaule et al, Gertzmann et al, Tullo et al and the instant invention is analogous as pertaining to coatings used to protect paper. It would have been obvious

to one of ordinary skill in the art to provide an antibacterial fungus proofing on the upper lacquer layer of the paper of Kaule et al in view of Gertzmann et al and further in view of Tullo et al to protect users of the paper from disease.

8. Claim 25 is rejected under 35 U.S.C. 103(a) as unpatentable over Kaule et al in view of Gertzmann et al and further in view of Tooth et al (US 4462866).

The disclosures of Kaule et al and Gertzmann et al are used as above. Kaule et al and Gertzmann et al do not disclose a lacquer layer on both sides of the paper.

Tooth et al discloses a security paper that can be used to make bank notes (Abs; col 3, lines 62-64). The document contains a security element, which may lie in a watermark, thus providing multiple security elements (col 3, lines 6-24). The paper can comprise an overlay in the form of a film that can cover the security element or can extend over the whole of one or more surfaces of the sheet. The overlay can be applied as a liquid which is physically dried and/or cured to form a film (col 3, lines 37-61). The overlay prevents the embedded elongate security element from becoming detached and, when extending over the whole sheet, provides protection for the sheet or, at least, such protection would have been obvious to one of ordinary skill in the art.

The art of Kaule et al, Gertzmann et al, Tooth et al and the instant invention is analogous as pertaining to coatings used to protect paper. It would have been obvious to one of ordinary skill in the art to apply a lacquer over both surfaces of the paper of Kaule et al in view of Gertzmann et al and further in view of Tooth et al to protect the entire paper.

9. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as unpatentable over Kaule et al in view of Gertzmann et al and further in view of Suss (US 6059914) and even further in view of Tooth et al.

The disclosures of Kaule et al and Gertzmann et al are used as above. Kaule et al and Gertzmann et al do not disclose a gap in the lacquer layer or an additional security element therein. Kaule et al does disclose applying a hologram by transferring it from a carrier material (col 2, lines 38-41; col 3, lines 19-29).

Suss discloses a method of transferring a hologram to a paper by producing a stamping foil having a decorative layer (i.e.-a hologram) provided on a carrier film only in a region-wise manner corresponding to the desired patterning of the substrate (Abs; col 2, lines 44-63). Multiple discrete hologram elements can be applied to a substrate (col 3, lines 7-11; col 7, lines 49-59, Fig. 3).

Suss does not disclose security elements between the hologram elements forming the pattern.

The disclosure of Tooth et al is used as above.

The art of Kaule et al, Gertzmann et al, Suss, Tooth et al and the instant invention is analogous as pertaining to security elements used in paper. It is well known in the art (such as in the paper of Tooth et al) to incorporate multiple security elements in security papers to make forgery difficult. It would have been obvious to one of ordinary skill in the art to apply multiple discrete hologram elements (thus causing gaps between the lacquer layers where the elements are located) to the paper of Kaule et al

in view of Gertzmann et al and further in view of Suss and even further in view of Tooth et al to make forgery of the paper more difficult. It would further have been obvious to incorporate the holograms in a watermark, which forms an additional security element in the gaps, to further hinder duplication of the paper.

Allowable Subject Matter

10. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The cited prior art fails to disclose silicones or wax as a component of the lacquer coatings and, based on the prior art disclosures, one of ordinary skill in the art would not have found it obvious to include such ingredients into the coatings.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS CORDRAY whose telephone number is (571)272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Daniels can be reached on 571-272-2450. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dennis Cordray/
Examiner, Art Unit 1791

/Matthew J. Daniels/
Supervisory Patent Examiner, Art Unit 1791